

**AMENDMENTS TO THE CLAIMS**

*Please amend the Claims as follows:*

Please cancel claims 1-31.

*Please add claims 32-62 as follows:*

**32. (Newly Added)** A computer-based method implementing a robust 2-phase commit protocol between a client and a server via a relational table and software facilitating communications with said client and said server, said relational table storing a list of potentially indoubt units of work, said computer-based method implemented in computer readable program code stored in computer memory, said computer-based method comprising the steps of:

- (a) receiving an invocation from said client for a first phase of commit for a transaction representing a unit of work;
- (b) inserting an entry in said relational table corresponding to said unit of work and transmitting an instruction to said server to prepare to commit for said transaction, said inserted entry indicating said unit of work is potentially an indoubt entry; and
- (c) receiving a request from said client to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, and
- (d) updating said relational table after execution of said request.

**33. (Newly Added)** A computer-based method as per claim 32, wherein, said received request is a COMMIT or a ROLLBACK decision, said method comprising the steps of:

communicating with said server and processing said COMMIT or ROLLBACK request, and upon successful processing,

deleting an entry corresponding to said COMMIT OR ROLLBACK request in said relational table.

**34. (Newly Added)** A computer-based method as per claim 32, wherein said received request is a RECOVER decision, said method comprising the steps of:

- querying said relational table to identify a list of indoubt units of work;
- transmitting said list of indoubt units of work to said client;
- receiving a COMMIT or ROLLBACK decision from said client;
- communicating with said server to process said COMMIT or ROLLBACK request, and upon successful processing,
- deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table.

**35. (Newly Added)** A computer-based method as claim 32, wherein said server is a database cluster and said software supports execution of said recover decision even if one or more members of the database cluster are unavailable.

**36. (Previously Amended)** A computer-based method as per claim 32, wherein said relational table specifies row-level locking.

**37. (Newly Added)** A computer-based method as per claim 32, wherein said relational table is a SQL table and said step of inserting an entry in said relational table is performed via issuing a SQL INSERT instruction.

**38. (Newly Added)** A computer-based method as per claim 32, wherein said relational table is stored in said server and a request for said insertion of entry in said relational table is placed on a

network message that includes said instruction to said server to prepare to commit for said transaction.

**39. (Newly Added)** A computer-based method as per claim 32, wherein said method is implemented across networks.

**40. (Newly Added)** A computer-based method as per claim 39, wherein said across networks element comprises any of, or a combination of, the following: local area network (LAN), wide area network, wireless network, or the Internet.

**41. (Newly Added)** A computer-based method as per claim 32, wherein steps (a) through (c) are performed over a separate network connection, said separate network connection separate from from a network connection over which requests for updating entries in said relational table are placed to avoid starting a new unit of work.

**42. (Newly Added)** A computer-based method as per claim 32, wherein said method comprises the step of mapping said 2-phase protocol onto a protocol supported by said server.

**43. (Newly Added)** An article of manufacture comprising computer usable medium having computer readable program code embodied therein implementing a robust 2-phase commit protocol between a client and a server via a relational table and software facilitating communications with said client and said server, said relational table storing a list of potentially indoubt units of work, said medium comprising:

(a) computer readable program code receiving an invocation from said client for a first phase of commit for a transaction representing an unit of work;

- (b) computer readable program code inserting an entry in said relational table corresponding to said unit of work and transmitting an instruction to said server to prepare to commit for said transaction, said inserted entry indicating said unit of work is potentially an indoubt entry; and
- (c) computer readable program code aiding in receiving a request from said client to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, and
- (d) computer readable program code updating said relational table after execution of said request.

**44. (Newly Added)** An article of manufacture as per claim 43, said medium further comprising:  
computer readable program code aiding in communicating with said server and processing said COMMIT or ROLLBACK request, and upon successful processing,  
computer readable program code deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table.

**45. (Newly Added)** An article of manufacture as per claim 43, said medium further comprising:  
computer readable program code querying said relational table to identify a list of indoubt units of work;  
computer readable program code aiding in transmitting said list of indoubt units of work to said client;  
computer readable program code aiding in receiving a COMMIT or ROLLBACK decision;  
computer readable program code aiding in communicating with said server to process said COMMIT or ROLLBACK request, and upon successful processing, and

computer readable program code deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table.

**46. (Newly Added)** An article of manufacture as per claim 43, wherein said relational table specifies row-level locking.

**47. (Newly Added)** An article of manufacture as per claim 43, wherein said relational table is a SQL table and computer readable program code inserts an entry in said relational table via a SQL INSERT instruction.

**48. (Newly Added)** An article of manufacture as per claim 43, wherein said relational table is stored in said server and a request for said insertion of entry in said relational table is placed on a network message that includes said instruction to said server to prepare to commit for said transaction.

**49. (Newly Added)** A computer-based method implementing a robust 2-phase commit protocol between a transaction manager and a database cluster via software facilitating communications with said transaction manager and said database cluster, said computer-based method implemented in computer readable program code stored in computer memory, said computer-based method comprising the steps of:

- (a) creating an SQL table for storing a list of potentially indoubt units of work
- (b) receiving an invocation from said transaction manager for a first phase of commit for a transaction representing an unit of work;
- (c) inserting, via an SQL INSERT instruction, an indoubt entry in said SQL table corresponding to said unit of work and transmitting an prepare to commit instruction to said

database cluster, said SQL INSERT instruction and said prepare to commit instruction placed on one network message to minimize cost;

(d) receiving a request from said transaction manager to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER, and

(e) updating said SQL table after execution of said request.

**50. (Newly Added)** A computer-based method as per claim 49, wherein if said received request is a COMMIT or ROLLBACK decision, said method comprising the additional steps of:

communicating with said database cluster and processing said COMMIT or ROLLBACK request, and upon successful processing,

deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table via an SQL DELETE instruction.

**51. (Newly Added)** A computer-based method as per claim 50, wherein steps (a) through (c) are performed over a separate network connection, said separate network connection separate from a network connection over which said SQL DELETE instructions are placed to avoid starting a new unit of work.

**52. (Newly Added)** A computer-based method as per claim 49, wherein if said received request is a RECOVER decision, said method comprising the additional steps of:

querying said SQL table to identify a list of indoubt units of work;

transmitting said list of indoubt units of work to said transaction manager;

receiving a commit or rollback decision from said transaction manager;

communicating with said database cluster to process said COMMIT or ROLLBACK request, and upon successful processing, and

deleting an entry corresponding to said COMMIT or ROLLBACK request in said SQL table via a SQL DELETE instruction.

**53. (Newly Added)** A computer-based method as per claim 52, wherein steps of querying, transmitting, receiving, and communicating are performed over a separate network connection, said separate network connection separate from a network connection over which said SQL DELETE instructions are placed to avoid starting a new unit of work.

**54. (Newly Added)** A method as per claim 49, wherein said SQL table specifies row-level locking.

**55. (Newly Added)** A computer-based method as per claim 49, wherein said method is implemented across networks.

**56. (Newly Added)** A computer-based method as per claim 55, wherein said across networks element comprises any of, or a combination of, the following: local area network (LAN), wide area network, wireless network, or the Internet.

**57. (Newly Added)** Software implementing a 2-phase commit protocol between a client and a server comprising computer-readable program code, said software implemented in computer readable program code stored in computer memory, said software implementing:

    a first module invoked to create a relational table in said server to store potential indoubt units of work;

    a second module invoked to insert or delete indoubt entries of work in said relational table,

wherein insertions of indoubt entries are performed if an invocation is received from said client for a first phase of commit for a transaction representing a unit of work; and

wherein deletions of indoubt entries are performed upon successful processing of a COMMIT or ROLLBACK decision; and

a third module invoked upon receiving a recover instruction from said client, said third module extracting a list of indoubt units of work from said relational table and transmitting said extracted list to said client, wherein said client inspects said list and issues a COMMIT or ROLLBACK decision to said middleware regarding said indoubt units of work in said list.

**58. (Newly Added)** Software as claim 57, wherein said server is a database cluster and said software supports execution of said recover decision even if one or more members of the database cluster are unavailable.

**59. (Newly Added)** Software as per claim 57, wherein said relational table specifies row-level locking.

**60. (Newly Added)** Software as per claim 67, wherein said relational table is a SQL table and said step of inserting an entry in said relational table is performed via issuing a SQL INSERT instruction.

**61. (Newly Added)** Software as per claim 67, wherein a request for said insertion of entry in said relational table is placed on a network message that includes an instruction to said server to prepare to commit for said transaction.

**62. (Newly Added)** Software as per claim 67, wherein said software further comprises computer readable program code implementing a fourth module mapping said 2-phase protocol onto a protocol supported by said server.